# CLAIMS

What is claimed is:

1. A method for communicating information in a wireless communication system, the method comprising:

allocating at least one channel of multiple available wireless channels to be an acknowledgment channel for carrying information between each of multiple field units and a base station;

assigning at least one channel for communicating a data payload between the base station and a corresponding field unit; and

transmitting acknowledgment information associated with a data payload over the acknowledgment channel.

2. A method as in claim 1 further comprising the step of:

dividing the acknowledgment channel into multiple time slots.

3. A method as in claim 2 further comprising the step of:

assigning a time slot of the acknowledgment channel for use by a field unit to transmit acknowledgment information to the base station.

4. A method as in claim 1, wherein the acknowledgment information is transmitted on an as-needed basis between the base station and corresponding field unit.

5. A method as in claim 1, wherein field units are allocated multiple forward link channels on an as-needed basis to transmit a data payload from the base station to a subscriber field unit and a portion of the acknowledgment channel in a reverse link carries feedback messages to the base station.

6. A method as in claim 2, wherein the data payload includes at least one network message transmitted between processing devices using a network protocol.

7. A method as in claim 1, wherein a first acknowledgment channel is allocated for use in a forward link and a second acknowledgment channel is allocated for use in a reverse link of the wireless communication system.

8. A method as in claim 2, wherein the time slots of the acknowledgment channel repeat on a periodic basis.

9. A method as in claim 2 further comprising the step of:

synchronizing the acknowledgment channel with another channel in a forward or reverse channel of the communication system so that acknowledgment information is transmitted or received in a corresponding time slot.

10. A method as in claim 1, wherein the acknowledgment information indicates that a data payload was properly received.

11. A method as in claim 1, wherein the acknowledgment information indicates that a data payload was not properly received.

12. A method as in claim 2, wherein the time slot includes CRC (Cyclical Redundancy Check) check bits.

13. A method as in claim 2, wherein acknowledgment information is transmitted in at least two time slots from at least two different field units.

14. A method as in claim 2, wherein a time slot is implicitly assigned for use by a field unit based upon an assignment of a corresponding channel for transmitting a data payload from the base station to the field unit.

15. A method as in claim 1 further comprising the step of:

assigning a portion of the acknowledgment channel for use by a field unit to transmit acknowledgment information.

16. A method as in claim 3, wherein use of an assigned time slot for transmitting messages in a reverse direction is delayed a preselected amount of time after a traffic channel is allocated for transmitting a data payload.

17. A method as in claim 1, wherein the information communicated in the wireless system includes at least one network message based on TCP/IP (Transmission Control Protocol/Internet Protocol).

18. A method as in claim 1, wherein at least part of the acknowledgment information is generated at a link layer.

19. A method as in claim 1, wherein at least part of the acknowledgment information is generated at a transport layer.

20. A method as in claim 1, wherein the acknowledgment channel is structured to carry information generated at multiple network layers.

21. A method as in claim 1, wherein the acknowledgment channel is structured to carry generic payload data.

22. A method as in claim 20, wherein the generic payload data is a maintenance message supporting a link between a field unit and the base station.

23. A method as in claim 20, wherein the generic payload data would otherwise be transmitted over a traffic channel.

24. A method as in claim 3 further comprising the steps of:

allocating additional bandwidth to a field unit for transmitting acknowledgment information when throughput capacity afforded by a single time slot is exceeded.

25. A method as in claim 23, wherein the additional bandwidth is at least part of a traffic channel.

26. A method for communicating information between transceivers of a wireless communication system, the method comprising the steps of:

allocating multiple traffic channels for carrying data messages between transceivers;

at a transceiver that transmits data messages over a traffic channel to a target transceiver, intercepting and decoding data messages intended to be transmitted over a traffic channel to determine their content; and

in lieu of transmitting selected data messages over a traffic channel, encoding the selected data messages into corresponding substitute messages and transmitting the substitute messages over a channel to a target transceiver, the channel structured so that a target transceiver can reconstruct original data messages based on receipt of the substitute messages.

27. A method as in claim 26, wherein the channel is a shared channel.

28. A method as in claim 27, wherein the shared channel is used for communicating acknowledgment information.

29. A method as in claim 27 further comprising the steps of:

at a transceiver, decoding a data message intended to be transmitted to a target transceiver over a traffic channel;

determining that the data message includes acknowledgment information; and

in lieu of transmitting the data message over a corresponding traffic channel, encoding the acknowledgment information and transmitting it in an assigned time slot of the shared channel.

30. A method as in claim 26, wherein a data message intended to be transmitted over a traffic channel includes at least a portion of a TCP/IP (Transmission Control Protocol/Internet Protocol) data packet.

31. A method as in claim 26 further comprising the steps of:

generating network packets at a first digital processing device in communication with a first transceiver;

from the first digital device, forwarding the generated network packets to a first transceiver where they are converted into data payloads;

from the first transceiver, transmitting the data payloads to a target receiver;

at the target transceiver, processing a received data payload to retrieve the network messages generated by the first digital processing device;

from the target transceiver, forwarding the retrieved network messages to a second digital processing device in communication with the target transceiver.

32. A method as in claim 27, wherein the shared channel is partitioned into time slots, each of which is assigned for use by a transceiver to support acknowledgment message transmissions.

33. A method as in claim 27 further comprising:

reducing a data message in size to form a substitute message and transmitting the substitute message over the shared channel.

34. A method as in claim 27 further comprising the step of:

dividing the shared channel into time slots.

35. A method as in claim 34, wherein a time slot is structured to include a data field of bits that indicate an ACK (Acknowledge) or NAK (No Acknowledge) message.

36. A method as in claim 35, wherein the ACK or NAK message is originally generated at a network layer.

37. A method as in claim 34, wherein the time slot includes network packet information of a layer 2 ACK (Acknowledge) or NAK (No Acknowledge).

38. A method as in claim 34, wherein the time slot includes layer 4 session source information identifying a transport layer session to which a network packet pertains.

39. A method as in claim 34, wherein the time slot includes CRC (Cyclical Redundancy Check) check bits.

40. A method for communicating information in a wireless communication system, the method comprising:

allocating at least one channel of multiple available wireless channels to be a shared feedback channel for carrying feedback information between each of multiple field units and a base station;

assigning at least one channel for communicating a data payload between the base station and a corresponding field unit; and

transmitting feedback information associated with a data payload over the feedback channel.

41. A method as in claim 40 further comprising the step of:

dividing the feedback channel into multiple time slots.

42. A method as in claim 41 further comprising the step of:

assigning a time slot of the feedback channel for use by a field unit to transmit feedback information to the base station.

43. A method as in claim 40, wherein the feedback information is transmitted on an as-needed basis between the base station and corresponding field unit.

44. A method as in claim 40, wherein field units are allocated multiple forward link channels on an as-needed basis to transmit a data payload from the base station to a field unit and a portion of the feedback channel in a reverse link carries feedback messages to the base station.